Institute for Digital Archaeology Method & Practice

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Rationale

Digital technology is having an unavoidable impact on all areas of archaeology and heritage. Unfortunately, many archaeologists and heritage professionals are being faced with uniquely digital questions and challenges for which they have little training or experience. As such, there is a critical need for initiatives that provide students and scholars with the capacity to thoughtfully apply digital methods and computational approaches to archaeological and heritage collections, knowledge, data, and materials. Further, there also exists the need to develop and nurture communities in which students and scholars are connected through a shared perspective on digital methods and thoughtful application of these methods.

To be fair, archaeology has had a long and fruitful engagement with digital methods and computational approaches. While there are several tantalizing in the late 1950s (George Cowgill), one of the best known comes courtesy of Deetz's seminal work on Arikara ceramics carried out in the early 1960s in which he used an IBM mainframe to discover "stylistic coherence" on over two thousand rim sherds from central South Dakota Medicine Crow site (Deetz). In this regard, Deetz's work, as well as those who followed him (M. Ascher and R. Ascher; GL Cowgill) tackled the idea of data science and informatics before the terms ever existed. Unfortunately, as Chenhall (1960) reported, the problems faced by many of these early electronic data projects were considerably more numerous than successes achieved (Robert Chenhall). The three major problems were that: (1) despite the claims of major computer manufacturers, hardware and software had only just reached the point where it was barely adequate for dealing with archaeological information; (2) facilities to support these sorts of undertakings were exceedingly rare; and (3) there wasn't a consensus among archaeologists as to what types of data should be stored and how that data should be collected.

As both hardware and software evolved, many of the most successful emerging computational archaeology projects projects were closely tied to museums. Projects such as the British Museum Association IRGMA, the Smithsonian Institution Information Retrieval System, and the Museum Computer Network's GRIPHOS all highlighted the important role that heritage institutions played in the storing, preserving, and providing access to digital archaeological data. (Scholtz and Robert Chenhall; Robert Chenhall). One non-museum project worth highlighting in this early period is that of the Arkansas Archaeological Survey (AAS) which, in 1972, was awarded a National Science Foundation grant to determine the problems and possibilities, including time factors and costs, of recording large quantities of archaeological data (Scholtz and Robert Chenhall; Jr). The project (which was in fact a constellation of related projects), employed the General Retrieval and Information Processor for Humanities Oriented Studies (GRIPHOS) system to provide an infrastructure for storage, search, and retrieval of the AAS site files, the Harrington Caddoan collection (housed in the Museum of the American Indian), AAS faunal collection, and AAS human skeletal collection (Scholtz and Robert Chenhall; Urban and Misunas). While The greatest accomplishment of the AAS GRIPHOS project was not the successes, but the problems. While technical issues were very much a concern (both in terms of software and hardware), the greatest challenge was disciplinary. There were enormous theoretical and methodological concerns (such as data standards, usage best practices, and lack of training infrastructure) that needed to be solved before

archaeological digital data repositories could be effectively leveraged in everyday archaeological practice.

At the same time that members of the archaeological community were working on the challenge of the preservation of and access to digital archaeological data, others were continuing to develop and apply quantitative computational methods that facilitated complex spatial modeling and statistical analysis that leveraged newly digitized archaeological data.

By the1980s, desktop computers had reached a point where they were effective tools for data visualization and archaeological imagery. One of the most important examples of this was the emergence of Geographic Information Systems (GIS). Archaeologists were among the earliest adopters of GIS, and remain one of the largest user groups in the sciences, social sciences, and the humanities. Instruction in the archaeological application of GIS is a central pillars in methods training (both at the graduate and undergraduate levels) in many anthropology departments. GIS has become so integral to archaeological practice that it is generally thought of as somehow being separate from the family of other digital archaeological methods.

Beyond GIS, many archaeologists also turned to desktop computers for drafting. Computer Assisted Design (CAD) allowed archaeologists to produce highly detailed and geometrically accurate plans, profiles, and feature maps at various scales, with differing emphases, and without time-consuming redrafting. The larger promise of CAD was also its ability to capture 3D data of a site or structure and to generate visualizations based on full 3D geometry.

The emergence of the CD-ROM as a platform for delivery rich media experiences had an incredible impact on the learning (both commercial and otherwise) - and archaeology was hardly untouched by this new trend. The most notable archaeological example was *Adventures in Fugawiland*. Originally published in 1990, *Adventures in Fugawiland* was designed to introduce students to the fundamentals of archaeological research by allowing them to simulate fieldwork experiences. While the first version of *Adventures in Fugawiland* was delivered on a 3.5 inch floppy disk, subsequent editions were distributed on CD-ROM. The simulation (calling it a game would be a misrepresentation) was developed by T. Douglas Price and Anne Birgitte Gebauer of the University of Wisconsin. Students worked with a realistic topographical map containing numerous fictional prehistoric sites (located in Fugawiland), chose sites to excavate on-screen, examined what they found, and answered questions about their findings. Students could refer to abundant “in-game” help modules, included in which was a regional plot providing a graph of the abundance of different site characteristics in Fugawiland. *Adventures in Fugawiland* enjoyed several editions, and was used as course material in many anthropology classes throughout North America.

It was also around this time that we see the beginning of a shift if the language used to describe this domain. Up until this point, the term “computational archaeology” had generally been used. However, at least partially in recognition that the term “computational” spoke to an algorithmic or mathematical process instead of medium (generally speaking), the term “digital archaeology” came into vogue. While the term “computational archaeology” is still used, it is generally only done so in reference to data science applications such as statistical and

mathematical modeling, spatial analysis, and simulations. In many ways, computational archaeology has evolved into a subdomain of the broader "digital archaeology."

To be clear, there are excellent examples of digital archaeology applications and projects that fall outside of these three domains. Digital publication (such as the long running peer-reviewed online journal, *Internet Archaeology*), immersive digital 3D heritage reconstructions (such as the Rome Reborn project or the 3D Giza project), and digital public archaeology applications (both desktop/browser-based and mobile) all exist, though are very much in the minority historically speaking.

Unfortunately, in focusing on specific domains of digital practice (especially GIS and computational analysis), archaeology has largely cut itself off from the wider world of digital practice that has evolved in the humanities (with the emergence of digital humanities), information science, computer science, digital libraries, modern & semantic web development, and the world of open source software. We see evidence of this when looking for digital themed sessions at national level professional archaeological conferences. The 2017 Society for American Archaeology meetings had a total of 38 non-GIS digitally themed papers, 5 digitally themed forums, 1 digitally themed poster session, and one digitally themed lightning talk sessions. The 2017 Society for Historic Archaeology meeting featured a total of 29 digitally themed papers. Its worth noting that these numbers are up significantly compared to previous annual meetings. In stark comparison, the 2017 MLA meetings featured 65 digitally themed ***sessions, workshops, forums, and roundtables*** (including 170 papers). The 2017 American Historical Association meeting featured 20 dedicated digitally themed ***sessions, workshops, roundtables, and forums*** (including 47 papers).

There are conferences dedicated entirely to digital archaeology method and practice, the most notable being the Computer Applications and Quantitative Methods in Archaeology (CAA) Meeting. Even at these conferences, however, topics of discussion focus mostly on computational field and lab research methods, and are usually intended for technical specialists. The result is that the conversations that happen at these meetings stay within a specialist silo, and do not make it into the broader archaeological community. In addition, these conferences do not include those non-archeologist scholars and professionals who often have to interact with archaeological data and collections, such as museum professionals, staff from historical societies, and physical scientists such as geologists, geographers, and ecologists.

This "siloization" also extends to individual scholars as well. Unfortunately, expertise in digital archaeology is the domain of a shockingly small number of highly skilled specialists. One might easily argue that specialization is the nature of methodology in archaeology. Cermacist, zooarchaeologists, and geophysical remote sensing experts, for example, all practice a highly specialized set of skills. This is the nature of the collaborative and multidisciplinary nature of the field. The difference, however, is that the increasing democratization of the digital skills, methods, and techniques that we have seen emerge in the digital humanities and the computational sciences is simply not happening at the same speed in the archaeological community.

There also exists a disconnect between digital archaeological practice among anthropological and humanist archaeologists. The reasons for this are not particular surprising. Even though they both share the archaeological method as a tool for scholarly inquiry, humanist archaeologists (classical archaeologists, egyptologists, etc.) and anthropological archaeologists are different disciplines with fundamentally different epistemologies. Despite this, there is a clear need for cross-pollination and collaboration in the domain of digital archaeology among both groups. What is needed are more common (and discipline neutral) professional spaces to facilitate fruitful dialog.

We also have to recognize that the archaeological ecosystem extends well beyond that of "practicing" archaeologists. Museum professionals, historical society staff and volunteers, physical scientists, and other cultural heritage professionals, often have to engage with archaeological records, data, and collections. Unfortunately, these scholars and professionals are often left out of digital archaeology discussions. This is particularly ironic given that the roots of modern digital archaeology are largely based in the museum community.

These issues are becoming problematic for the discipline as a whole. Archaeology has found itself in an age in which digital technologies are having an indelible and unavoidable impact on *all* areas of the discipline, including research, teaching, outreaching, publication, and scholarly communication. However, archaeologists who have not traditionally characterized themselves as being particularly digitally inclined or who simply do not have the necessary grounding in digital skills are required to engage professionally with issues, methods, models, and practices that are uniquely digital in nature. There are very few opportunity for students or existing professionals to build digital skills. Continued focus on the aforementioned domains (at the exclusion of all others) puts the discipline at risk of completely cutting itself off from the wider, and extremely fruitful, world of digital practice.

Overview

Co-directed by Dr. Ethan Watrall and Dr. Lynne Goldstein, the Institute for Digital Archaeology Method and Practice (digitalarchaeology.msu.edu) was designed with a series of core goals:

1. Build capacity among private sector, public sector, student, and scholarly archaeologists - especially in areas that fall outside "traditional" digital archaeological practice
2. Bring methods and best practices more common in the Digital Humanities into the ecosystem of digital archaeology
3. Build the foundation for a networked and intellectually unified community of practice for digital archaeology
4. Bring together anthropological and humanist archaeologists to collaboratively engage with issues of digital archaeology
5. Introduce digital archaeological methods and practices to those non-archaeology scholars and professionals who regularly interact with the archaeological world.

6. Expand the dialog in archaeology as to the scope of digital practice, thereby expanding the definition and reach of digital archaeology

7. Create a framework that gives attendees the opportunity to develop a digital archaeological project in line with their research interests or institutional goals.

In addition to these goals, we argued that the benefits of the institute weren't purely for the archaeological community. We very strongly believed that archaeology had a great deal to offer the wider digital scholarly community. Archaeologists have significant experience in domains that are of particular interest to the digital humanities (such as big data, public engagement, and applied and experiential learning). The idea was the the institute would not only introduce new digital methods to the archaeological community, but bring a uniquely archaeological perspective into the wider digital scholarly community.

Organization

The Institute was organized around two week long, in person meetings on the campus at Michigan State University (August 17-22 in 2015 and August 15-20 in 2016) that bookended a year long period in which participants worked and collaborated remotely. The choice of late summer was important as it was intended to fall after the end of the field season for many archaeologists (both domestic and international) and before the beginning of most university semesters. The result is that we can guarantee accessibility to the widest amount of potential attendees. The institute was physically hosted in The Lab for the Education and Advancement in Digital Research (LEADR), an interdisciplinary collaborative space AT MSU for history and anthropology undergraduates and graduate students to learn, experiment, and build with cutting-edge tools, technologies, and methods for digital social science and humanities.

Application & Selection Process

Participation in the institution was by application. In an effort to have the broadest recruitment as possible, we distributed the call for application to a list of more than 5000 academic archaeologists, public archaeologists (NPS, DNR, etc), museum archaeologists, cultural resource management archaeologists, and graduate students. In addition, the call for applications was distributed directly to the membership of the Society for American Archaeology, the Archaeological Institute of America, the Canadian Archaeological Association, the American Academic Research Institute in Iraq, the American Research Center in Egypt, the The Society of Africanist Archaeologists, the European Archaeological Association, the American School of Classical Studies at Athens, the American Academy in Rome, the West African Research Association, and the American School of Oriental Research.

In total, the institute received 199 applications for all corners of the archaeological world - academic archaeologists, public archaeologists (NPS, DNR, state historical/archaeological societies, etc), museum archaeologists, cultural resource management archaeologists, and graduate students. Roughly 10% of the applicants were international (mostly Western Europe, though several applicants from the Middle East and Africa). We were very happy to see a range

of geographic, theoretical, and methodological specializations among the academic archaeology, museum archaeology, and graduate student applicants. In addition, a portion of our applicants came from scholars and practitioners from closely related fields - such as museum studies, historic preservation, and art history.

Except for a very small number, all applicants were qualified and quite competitive. As such, the selection process proved to be particularly difficult. Ultimately, we were guided by several principles:

- Maintain a balance between academic archaeologists, public archaeologists, museum archaeologists, cultural resource management archaeologists, graduate students, and scholars from affiliated fields.
- Maintain a balance between applicants with existing digital experience and those without.
- Ensure that graduate students are well represented
- Privilege applicants from institutions that have no digital archaeological infrastructure or institutional training opportunities.
- Among the academic archaeologists, maintain a balance between R1 universities, regional universities, and small liberal arts colleges.
- Where possible, ensure significant representation from traditionally underrepresented groups.

The institute accepted 20 applicants. In addition to these 20 fully-funded attendees, we opened up an additional 10 unfunded spots. These unfunded invitations were extended to individuals who had preexisting access to resources through their institutions. The unfunded spots also allowed us to extend invitations to several excellent international applications. Of the 30 accepted attendees, 7 were faculty from public institutions (including one post-doc), 4 were faculty from small liberal colleges, 3 were staff or curators from cultural heritage institutions (museums, historical societies, etc), 3 were CRM archaeologists, 9 were graduate students (all from public institutions), and 4 were public sector archaeologist (NPS, etc)

Institute Staff

In addition to curriculum development carried out by co-directors Ethan Watrall and Lynne Goldstein, the institute brought together a variety of highly respected and skilled faculty members from both inside and outside of the archaeological community. Faculty lectured, led workshops, led discussion sessions, and mentored institute attendees as they designed, developed, and deployed their capstone digital archaeological project over the course of the institute. Full list and bios of all institute faculty can be found at http://digitalarchaeology.msu.edu/faculty. A full list of the institute curriculum (with the associated faculty) can be found in Appendix A.

Institute Themes

All activities of the Institute for Digital Archaeological Method & Practice (lectures, workshops, etc) were organized to address a variety of themes:

- **Web Mapping & Digital Cultural Mapping:** Focusing on the open geospatial web, with particular emphasis on low cost and open source tools to display, visualize, share, present, publish, and creatively combine geospatial data for research, scholarly communication, and public engagement.
- **Publication and Scholarly Communication**: Exploring the radically changing landscape of scholarly publishing and communication, and the ways in which archaeologists (public, private, scholarly, or student) can leverage new digital tools and platforms to build, publishing, and widely disseminate engaging archaeological "publications."
- **Data, Linked Data, and Digital Libraries**: Focusing on digital archaeological data standards and platforms (both centralized and decentralized). Promote best practices as well as legal and technical standards for making archaeological data useful, usable, open, sharable. Methods, tools, and best practices for building digital libraries and repositories for preservation and access of archaeological materials, data, and information.
- **Public Outreach & Engagement**: Examine how to use digital tools and techniques to engage with the public over issues of archaeological resources, preservation, and archaeological education.
- **3D & Augmented Reality**: Exploring low cost and low friction methods, tools, and best practices to capture and present archaeological materials in 3D for research, publication, teaching, or public engagement. Special emphasis on building applications and digital experiences that augment physical, real-world environment with computer-generated sensory input such as sound, video, digital imagery or geospatial data and information.
- **Project Development & Management**: Learning about the practical, day-to-day work and intangible aspects of developing and managing digital archaeology projects. Including issues of digital archaeological project sustainability.

An Ethos of Openness

The institute was designed from the outset to embrace an ethos of openness. This meant that all institute materials (learning materials, videos, etc) were made accessible to the public. All collaborative rapid development projects built by invited attendees during the institute were accessible to the public. Regular project updates and blog posts written by invited attendees were open and accessible by the public on the institute website. Invited attendees were strongly encouraged to use open source tools, framework, and technologies to build their capstone projects. Where appropriate, invited attendees were also strongly encouraged to

release their projects (or critical technical components of their project) under an appropriate open source license on GitHub.

Pre-Institute Activities

Before arriving at MSU for the first institute meeting, invites attendees were required to create an account on Codecademy (codecademy.com) and complete a series of freely available technical tutorials. These tutorials, which focused in HTML, CSS, and Javascript, ensured that all attendees had a fundamental understanding of building applications and digital experiences on the open web using open technology. In addition to the required technical tutorials, invited attendees were provided be provided with a pre-institute reading list that they will be required to complete before arriving at Michigan State University. We also used this time as an opportunity for invited attendees to introduce themselves (publicly on the institute website, and privately on the institute's Slack team), discuss their background, interests, and motivations for attending the institute. The goal was to start to form critical community among the institute attendees, as well as to be transparent about institute activities to the broader archaeological community.

Institute Meetings

In Year 1, the the institute meeting was made up of lectures, hands-on workshops, and discussion sessions on a variety of digital archaeological methods, tools, platforms, and technologies (the full Year 1 schedule can be found at http://digitalarchaeology.msu.edu/year-1-schedule/). All lectures and workshops were delivered and led by a variety of highly respected and skilled faculty members from both inside and outside of the archaeological community (http://digitalarchaeology.msu.edu/faculty). Invited attendees also collaborated with one another on a series of rapid development challenges intended to allow them to apply and experiment with tools and techniques covered in other parts of the institute. In Year 2 (http://digitalarchaeology.msu.edu/year-2-schedule/), the focus of the institute shifted from structured sessions to focused work on the attendees' capstone projects (discussed below). Invited attendees formally presented their project so they could be evaluated and discussed by institute faculty other attendees. A critical part of this process was the emphases on social development, which provided opportunities for attendees to further refine their projects in the company of both the institute faculty as well as their fellow attendees. Year 2 also included a series of talks and workshops focusing on topics suitable to digital projects in development. These sessions include Data Preservation, Advanced Project Management For Digital Archaeology, and Sustaining Digital Archaeology Projects.

Institute Capstone Projects

While participants spent time attending lectures, participate in hands-on workshops, and collaborating on small scale rapid development projects, the organizational focus of the institute as a whole was on a significant digital archaeology capstone project which attendees

were challenged to envision, design, develop, and launch by the end of the institute. At the end of the institute's first meeting, attendees presented a proposal for their capstone digital archaeology project to both faculty and peers. On the basis of that proposal, they were matched with one (or more) of the institute's faculty as a mentor. While participants were welcome to develop their projects individually, they were also encouraged to team up with other institute attendees to work collaboratively. Invited attendees were also welcome to collaborate on their capstone projects with colleagues who are not attending the institute. The specific focus of the capstone projects was totally open – invited attendees were free to choose a project that was driven by their general interests, research, data, or institution. The only requirement is that the project had to have strong public component, consumed or produced open data (where appropriate), and leveraged open source tools, framework, and technologies. Attendees worked on their projects throughout the interim year, presenting their progress at the beginning of the second institute meeting. This was critical as it afforded the opportunity for the institute faculty (and other attendees) to identify where projects might need help or focused intervention. The schedule of Year 2 was designed specifically to have ample time for the attendees to refine, fix, and complete their projects in tandem with institute faculty and other attendees. This social development time was critical to the successful completion of many of the projects. Both faculty and fellow attendees were able to organically jump in to help when and where there was a need. This transparency and collegiality of work and need was helped enormously by daily "stand up meetings" (also referred to as "scrums" or "scrum meetings") - a technique in software development in which all member of a team stand up and, in 1 minute quickly answer 3 questions: (1) What did I do yesterday to move my project forward? (2) What am I doing today to move my project forward? (3) What is standing in the way of my project moving forward?

At the end of the institute, all attendees publicly launched their projects. Its important to note that "launched" meant different things to different people given the nature of their projects (all of which can be read about at http://digitalarchaeology.msu.edu/news/). Unfortunately, there were several projects that simply didn't materialize as they were originally designed. In some cases, this was because the individual dropped out of the institute during the intervening year. In other cases, technical or local constraints could not be overcome. The idea of failure (and how to mitigate failure) was, interestingly enough, a part of the broader discussion of project development and management in digital archaeology and a critical part of the capstone projects. In particular, institute faculty and attendees spent significant time and energy discussing the various shades of "failure," and the idea that some instances of failure might actually be quite valuable (personally, professionally, and to the broader community).

Technology Enabled Community and Collaboration

Perhaps one of the greatest challenges of the institute was how to maintain the community during the intervening year after everyone had returned to their home institutions. The communication, collaboration, and camaraderie that came from spending 8+ hours per day for six straight days had become integral to the forward momentum of many of the projects. Howe could that be replicated? Three solutions emerged that allowed us to, at least attempt, to mirror physical co-location - three intentional, one unintentional. First, at the beginning of the

institute we created an instance of Slack (https://slack.com/) in which faculty, attendees, and the institute directors could asynchronously discuss issues, ask for help, make announcements, and share tools and resources. While Slack is purpose-built for this sort of distributed community work, it simply didn't get used as much as we would have liked. The simple reason is that most of the attendees had never used it. As such, adoption was slow (or not at all) as they figured out the ins and outs of a new communication platform. The second strategy was to require all institute attendees to post mostly project updates to the institute website project updates (http://digitalarchaeology.msu.edu/news/). These posts served two purposes. First, they communicated institute activities to the broader scholarly public and solicited comment from those not a part of the institute. Second, they encouraged attendees to maintain a level of forward momentum on their projects (if only because working on their projects meant they had something to write about). The third (intentional) strategy was to build and launch the Digital Archaeology Commons (http://commons.digitalarchaeology.msu.edu/). Built using Commons in a Box (http://commonsinabox.org/), the Digital Archaeology Commons (DAC) allows users to create thematic groups, discussion forums, and associated websites. During the interim year, the institute group on the DAC (http://commons.digitalarchaeology.msu.edu/groups/institute-for-digital-archaeology-method-practice/) served as an additional platform for discussion between institute personnel (attendees and faculty) on issues relating to their projects or to broader technical or professional concerns. Instead of making the group closed, we chose to make it open to the public in an effort to make it easier for the broader digital/archaeological community to participate in discussion and give advice or help to institute attendees.

In addition to being a hub for institute activities, the DAC was intended to be a platform for the broader digital/archaeological community. In this regard, the DAC has been somewhat successful. A variety of groups have been created (http://commons.digitalarchaeology.msu.edu/groups/) dedicated to both broader digital archaeological topics (Archaeogaming, Digital Data Collection, Teaching Digital Archaeology, etc) as well as specific projects (Digital Index of North American Archaeology, MicroPasts, PeriodO, Federated Archaeological Infrastructure Management System, etc). It was our hope that after the end of the institute, the DAC continued as a community for the broader digital archaeological community.

The final strategy for maintaining communication and community during the intervening year was Twitter. Strictly speaking, using Twitter wasn't programmatically planned. However, many of the institute attendees already used Twitter and were activate participants in its informal network of archaeologists. Quite a bit of institute-related (or institute adjacent) discussion took place on Twitter during the intervening year under the #msudai hashtag. The value this approach is that the interactions were not closed, and non-institute people could be drawn into conversations, thereby allowing a fair degree of permeability between the institute and the broader (twitter) archaeological community. Its important to note that even though the institute officially ended in the summer of 2016, the #msudai hashtag is still very much active and in use by many members of the institute.

Takeaways

Ultimately, we feel that the institute was a great success. It met the goals that we had set out at the beginning of the institute (discussed above in the Overview section).

More importantly, however, we would argue that there were several key components that were critical to the overall success of the institute. These key components form the beginnings of a model of sorts that could be adopted or adapted for a curricular or extra curricular setting in a university (at the undergrad or grad level), a community archaeology program, or in a heritage institution.

Building Things

The institute had a decidedly applied approach. In particular, we privileged the design and development of ***real*** things. As discussed, the ultimate outcome of the institute was the development and launch of a complete project that has real content and data, has thoughtfully designed goals and outcomes, is of potential value to a specific audience, and is publicly accessible. Even in the case of the rapid development challenges, which are primarily learning exercises, we see the production of digital experiences that could be released and accessible to anyone to engage with and are more than just technology demos. The argument here is that learners acquire a far better understanding of tools, technologies, platforms, and systems through actual development than with passive analysis and commentary. The added benefit is that by building tools, applications, and digital user experiences, learners also have the opportunity to make a tangible and potentially significant contribution to the heritage and archaeological community.

Hacking and Breaking

This may come off a little glib, but there is incredible (almost immeasurable) value in learners gaining experience with digital tools by reaching their hands into the innards (metaphorically speaking) and poking, prodding, and changing things to see what happens. This is particularly relevant when learners are working with existing code (as opposed to building something from scratch). Being able to change something small and run the code to see what happens, is a powerful way of figuring out how something works and how you can modify it for your needs.

Figuring it Out

During the institute, there was an extremely high value placed on independent and non-directed technical problem solving. Being able to identify a technical problem or challenge, research the best solutions to address the problem at hand, and implement those solutions is an incredibly valuable skill. Ultimately, providing people an environment in which they can develop a set of skills that allow them to figure things out for themselves transforms them into practitioners who can jump into new technical environments without much in the way previous experience, but with an enormous amount of confidence about their ability to pick up what is

needed to solve their immediate challenges. Much of this skills requires being able to ask the right questions and knowing to whom those questions should be posed.

Having No Fear

One of the persistent challenges we've encountered over the years in our digital heritage and archaeology programs and initiates at MSU is a low level (or sometimes not so low level) fear and apprehension about about engaging with digital tools beyond that of a regular user. The fear that editing source code for an application or working in a development environment of some sort might somehow result in catastrophic and irreversible damage to the project. The result is oftentimes a paralysis, of sorts. An unwillingness to even touch source code or step into a development environment. Quite honestly, the solution to this issue requires experience. However, this experience can be thoughtfully engineered and fostered by creating an approach that scaffolds archaeologists and heritage professionals into greater levels of engagement and expertise with digital methods. More than this, however, it requires an environment that recognizes and respects the fact that many archaeologists and heritage professionals (and students) have differing levels of comfort (or outright apprehension) towards digital and computational methods.

Understanding the Value of Failure

Despite checks and balances (scrum, vision documents, project milestones) projects will often fall short of what was originally proposed. As discussed, there were a few instances in which projects were either radically different from their original concept or which failed entirely to produce any tangible outcomes. In some cases, these failures were a result of unforeseen technical issues completely out of the control of the developers. In some cases, they were a result of problems acquiring necessary content or data. In other cases, it is just a matter of bad time management. Regardless of the reasons, we always try to find value in the failure. This could mean identifying, discussing, understanding the reason why the failure happened and exploring strategies for overcoming this issue in the future. If the issue expresses itself early enough in the development process, we worked with the individual and institute faculty to scale the project down to a manageable scope or pivot the outcome or technical architecture so that the challenges might be completely avoided. The argument in this regard is twofold. First, any setting in which digital heritage and archaeology instruction is happening (curricular or extra curricular) must allow for and be understanding of failure. Second, failure must always have a positive outcome of some sort. Ultimately, failure must always be a learning experience.

The Importance of Openness

Perhaps one of the strongest threads that runs thought the institute (and how we do digital heritage and archaeology work at Michigan State University) is a strong commitment to both the idea and practice of openness. As we've seen, this expressed itself in in a variety of ways during the institute. First, all of the initiatives we've discussed strongly privilege the use of open source tools and platforms. There are many excellent arguments that can be made about the value of open source software and tools. Open source software supports sustainability, is

generally more secure, is more financially accessible (as it is usually free to use), is more community driven, is not beholden to the whims of a single corporate entity, is much more interoperable, and is built on de-facto community standards. By extension, a commitment to using open source software also means releasing your work under an open source license. By doing this, you are contributing to the broader ecosystem of practitioners within digital archaeology and heritage. Practically speaking, this has tended to express itself in the use of GitHub to share code and develop openly. GitHub is hardly the only platform to do this. However, it is by far the most popular and widely used. As such, using GitHub to build digital archaeology and heritage applications and digital experiences makes work more visible and accessible. By extension, a commitment to producing and consuming open source software means a commitment to building on and for the open web.

Beyond open source software, the institute was built around the idea of working openly and writing publicly. There is incredible value in writing publicly about process and product. It creates connections between scholars and practitioners. It raises your profile within the community (something which is of particular value to students and new scholars). It encourages the opportunity for fruitful and valuable discussion and collaboration.

Creating a Culture of Generosity

We feel very strongly that the institute could not have succeeded as it did if hadn't existed within a culture of generosity. In this regard, it is also incredibly important to note that a culture of generosity is not something that happened (or happens) by chance. Instead, it is something that we engineered, fed, and fostered. This is not to say that those that archaeologists and heritage professionals are innately uncharitable, quite the contrary. However, the culture of the academy (and many other public institutions), generally speaking is not. Scholarship is often seen as a zero sum game in which ideas, work, and time needs to be jealously protected until you are able to claim it, publish it, present it, or release it. How do we overcome this challenge in digital archaeology and heritage? In part, a culture of generosity can be baked into the fabric of any initiative intended to build digital capacity and community (such as the institute). Collaborative projects, co-working, shared goals and outcomes can help accomplish this. There is also incredible value in helping people understand the very tangible professional benefits that come from being collaborative and generous with experience and expertise. Ultimately, if there is one single, clear lesson to be learned from our work on the Institute for Digital Archaeology Method & Practice it is the incredible (and tangible) importance of an environment in which people are social, they teach each other, and are generous with their expertise, their experience, their code, their data, their tools, and their time. Above all else that has been discussed, this is probably the most important and powerful takeaway from this project.

Appendix A

Schedule & Curriculum

digitalarchaeology.msu.edu

Unless otherwise stated, all institute activities will take place in LEADR (leadr.msu.edu) – which is located in 112 Old Horticulture.

MONDAY (AUGUST 17)

8:00-8:30	**Check In**
8:30-10:30	**Opening Remarks, Institute Introduction, Logistical Information**
10:30-10:45	**Break**
10:45-12:00	**Introduction to Project Management for Digital Archaeology (Ethan Watrall)** In this session, attendees will be introduced to best practices in project management for digital archaeology projects. Emphasis will be placed on low cost, low barrier approaches to digital project management (many of which have been pioneered in the digital humanities). Topics that will be covered include development models, scoping, schedule planning, creating a development workplan, budgeting, building a team, user research, design constrains, prototyping, team management, revision and version control systems, issue tracking, code management, and open source methods.
12:00-1:15	**Lunch**

1:15-2:30	**Introduction to Project Management for Digital Archaeology, Part II (Ethan Watrall)**
2:30-2:45	**Break**
2:45-4:30	**Introduction to GitHub (Ethan Watrall)**
4:30-5:00	**Day 1 Wrap Up**

TUESDAY (AUG 18)

8:30-9:30	**GitHub Website Collaborative Rapid Dev Challenge Demos** Each team will have 5 minutes to demo their GitHub/Website rapid development challenge project.
9:30-10:30	**Introduction to Digital Libraries, Digital Archives, and Digital Repositories (Catherine Foley)**
10:30-10:45	**Break**
10:45-12:00	**Hands on with KORA Digital Repository Platform (Catherine Foley)** This tutorial provides an overview of KORA, an open-source, database-driven, online digital repository application for complex multimedia objects (text, images, audio, video). A walk through the KORA backend will illustrate how the repository accommodates a variety of digital resource types and metadata schemes. Participants will also explore websites designed to present and disseminate digital collections stored in KORA. The tutorial will demonstrate how to create a project in KORA, populate that project with appropriate metadata schemes, label and define the metadata elements in those schemes, and finally how to upload digital files and related metadata into the system through a web data entry form. At the end of the session, participants will have the opportunity to apply what they have learned by creating and populating a test KORA database for a small selection of archaeological content.

12:00-1:15 **Lunch**

1:15-2:15 **Linked Data in the Archaeological Wilds (Daniel Pett)**

This talk will focus on the use of Linked Open Data in the archaeological wild and will look at the successes and failures of various projects that have emerged in the last few years. It will look at the implementation of the CIDOC-CRM within the British Museum, the development of Nomisma and the success of projects such as Pelagios.

2:15-2:30 **Break**

2:30-4:30 **Fundamentals of Linked Open Data for Archaeology (Daniel Pett)**

A planned workshop will run through the basics of linked Open Data in the archaeological sector, looking at the core values and principles needed to understand the processes. It will then show participants how to align their own datasets (or those of others) to easily accessible resources such as Nomisma, the British Museum, the Ordnance Survey and emerging models. It will also discuss APIs and how they might also be of use (lower barrier for entry) and how these can be integrated into their own work.

4:30-5:00 **Day 2 Wrap Up**

WEDNESDAY (AUGUST 19)

8:30-9:30 **Introduction to Web Mapping for Archaeology & Heritage (Ethan Watrall)**

In this lecture, attendees will be introduced to fundamental issues and concepts of creating interactive maps and rich spatial user experiences on the open web. Topics that will be discussed include the architecture of the geospatial web, web map services (open vs. closed, commercial vs. community), Javascript mapping libraries, no-cost vs. low cost solutions, geocoding, geoparsing, georectification, and spatial data in web maps. In addition, the lecture will introduce some of the thorny and complicated issues that attendees might encounter when building interactive web maps for archaeology and heritage.

9:30-9:45 **Break**

10:45-12:00 **Fundamentals of Building Web Maps (Brian Geyer)**

This workshop serves as a hands-on introduction to various, practical aspects of web mapping. Participants will use several open source tools to map a data set which contains geospatial attributes. Attendees will be encouraged to expand upon the workshop basics to tease out interesting facets of their dataset when mapped.

12:00-1:15 **Lunch**

1:15-2:15 **Introduction to Archaeological Data Publishing (Eric Kansa)**

Archaeology, a discipline that often relies upon destructive methodologies, urgently needs to make data sharing and preservation an accepted norm. However, the realities of professional incentives and the lack of clear research outcomes based on shared data inhibit many from participating. To meet these needs, this session will introduce key concepts of a “data sharing as publication” model for data dissemination. The session will communicate some of our recent NEH / IMLS and Alfred P. Sloan Foundation supported efforts to better align Open Context’s (an

open-access data publication system) data dissemination with professional needs. In 2010, following extensive user-needs evaluations, we began work to make Open Context a more formalized data publishing venue. Researchers wanted high-quality, professionally recognized venues to contribute toward, and they also required high-quality, citable datasets, ideally aligned to common disciplinary standards. In response, we secured archival services from the California Digital Library, one of the world’s leading digital repositories. We also recruited an editorial board and began work to develop software-assisted workflows to collaboratively improve data quality and standards alignment. The session will provide a high level overview of how data publication fits within the larger context of professional communications. In addition, the discussion will highlight how the “value-added” of editorially supervised data publication can help researchers participate in key Web standards, technologies and digital library archiving services. These standards include the intellectual property and technical requirements of “Linked Open Data”. Finally, Open Context’s model of data sharing as publication can be replicated.

2:15-2:30 **Break**

2:30-4:30 **Methods in Archaeological Data Publishing (Eric Kansa)**

This workshop will have a “hands-on” and technical focus, demonstrating how publication processes can help improve the discoverability, reuse, and longevity of primary scholarly materials. The session will give participants an opportunity to act as a “Data Editor”, taking datasets through an entire publication workflow from submission to public dissemination and archiving. In this session, researchers will relate datasets with other data published on the Web, using Linked Open Data methods. The complex interdependencies between various parts of a large dataset and the software needed to use and interpret data require different quality control processes than seen in manuscript publishing. Editorial processes for improving data quality have many of the same requirements as editorial processes for improving software. Bug tracking can therefore be an important tool to support data publishing workflows. Participants will use our Data Refine System, integrating popular open-source applications (Google Refine and the Mantis Issue Tracker), that now supports Open Context’s publication workflows. The Data Refine System allows researchers and data editors to collaborate in the review, clean-up and documentation of datasets to prepare them for publication. In this process, researchers will also align parts of datasets to key shared vocabularies using Linked Open Data methods. The session will show participants how to use Google Refine’s Freebase entity reconciliation features, and the session will show participants how to reference entities in the Encyclopedia of Life and the Pleiades Gazetteer. Rather than working toward monolithic centralization, this session will show researchers how to participate in a growing and widely distributed humanities information ecosystem. Thus, the skills and perspectives shared in this session will help researchers how to best use the Web in general, not just Open Context in particular. Linked Open Data offers a powerful means to leverage distributed data for research applications. The session will illustrate how innovative publishing workflows will contribute to the Web of Data, give researchers recognition and rewards, and open new doors to exciting research opportunities.

4:30-5:00 **Day 3 Wrap Up**

THURSDAY (AUGUST 20)

8:30-9:30 **Web Mapping Collaborative Rapid Dev Challenge Demos**

Each team will have 5 minutes to demo their web mapping rapid development challenge project.

9:30-9:45 **Break**

9:45-10:45 **Archaeological Scholarly Publication and Communication in the Public Digital Age (Christine Szuter)**

Digital archaeology is more than digitization. It is a way to ask different questions, solve intriguing problems, engage diverse audiences, and communicate research results in new arenas. The humanities encompass all the ways we experience being human. So although the juxtapositioning of technology and humanities can seem jarring or an ill-fit, the digital world actually complements the humanities. It changes the ways we conduct research, it allows us to stimulate all of our senses in the publication of our work, and it forces us to ask big-picture questions leading to the creation of large comparative works. Understanding how reading, researching, writing, and communicating have changed in a digital world will lead to the creation of news ways of thinking, organizing, and developing research topics and questions. Archaeologists are well-poised for this world because their work is highly interdisciplinary and collaborative. The digital platform will allow for them to expand this foundation and think more creatively about their research and the ways to communicate that work to diverse audiences.

10:45-11:00 **Break**

11:00-12:00 **Planned Obsolescence: Publishing, Technology, and the Future of the Academy (Kathleen Fitzpatrick)**

What if the academic monograph is a dying form? If scholarly communication is to have a future, it's clear that it lies online, and yet the most significant obstacles to such a transformation are not technological, but instead social and institutional. How must the academy and the scholars that comprise it change their ways of thinking in order for digital scholarly publishing to become a viable alternative to the university press book? This talk will explore some of those changes and their implications for our lives as scholars and our work within and without universities.

12:00-1:15 **Lunch**

1:15-2:45 **Digital Tools for Scholarly Publishing and Communication (Kathleen Fitzpatrick)**

In this workshop, participants will be introduced to several key tools for scholarly publishing and communication. Attendees will explore tools that are suitable for both born digital and print projects. Special emphasis will be placed on open source tools that are both easily installed and administered which allow scholars (of all kinds) to collaboratively manage the entire lifecycle of a project, from development to launch.

2:45-3:00 **Break**

3:00-4:30 **Where Does Social Media Fit Within Archeology? Why Should Archeologists Participate? (Lynne Goldstein & Terry Brock)**

This session will provide an overview of digital social media, then apply it to archaeology. The first component of the scan will examine what digital social media is, outline some of the primary social media tools, and discuss how they have been used within the primary spheres of business, entertainment, nonprofits, and marketing. The second part will discuss the potential and actual applications of digital social media to archaeology. We will examine case studies ranging from organizations to individual archaeologists who have successfully used social media in conjunction with archaeology. In this section, we will use the experience of Michigan State University's Campus Archaeology Program to demonstrate both positive and negative results. The third component will address the advantages and disadvantages of implementing and using social media for archaeology. This will include a discussion of determining value for a project, necessary resources, training, security, and the protection of cultural resources.

4:30-5:00 **Day 4 Wrap Up**

FRIDAY (AUGUST 21)

8:30-9:30 **Augment Your Archaeology (Shawn Graham)**

This session will provide an overview of current trends and state of the art in small-scale 3d imaging and augmented reality. By 'small-scale', I mean a single scholar or small team, working from a constrained budget. We will look at the hype of augmented reality, to focus on the 'what's in it for me?' questions. We will examine case studies of effective – and ineffective – uses of augmented reality. 3d imagining and augmented reality have a natural home in public archaeology and outreach projects, but with the rise of the so-called 'maker' movement, the possibilities for 3d imagining and augmented reality to enhance research and data sharing are immense.

9:30-9:45 **Break**

9:45-12:00 **Getting Started with Augmented Reality in Archeology (Shawn Graham)**

This tutorial provides an overview of a simple workflow in structure-from-motion photogrammetry, bringing participants through the necessary steps to 'digitize' a physical object. Participants would try various free (proprietary) and open-source tools to render their objects; discussion would centre around not just the technical aspects of this work but also the open-access and intellectual property issues. Participants would then upload their models to a variety of platforms for web-based Augmented Reality (Sketchfab for instance supports annotating digital objects, as well as the Oculus Rift 3d Headset; combined with a Leap Motion Detector, one can then manipulate virtual 3d objects by hand.) Print based AR, image-based AR, and various museological and interpretive use-cases will be explored.

12:00-1:15 **Lunch**

1:15-4:30 **Open Critical Play, Experimentation, Collaboration, Discussion, Preparation**

This is an open & unstructured session in which attendees will have the opportunity to play/experiment with the tools, techniques, methods, and equipment that they might not have gotten the opportunity to experience thus far in the institute. It is also an opportunity for attendees to set down and talk with institute faculty (and other, fellow attendees) about their final project. This session is also an opportunity for attendees to prepare their lightning project presentation.

4:30-5:00 **Day 5 Wrap Up**

SATURDAY (AUGUST 22)

8:30-9:00 **Final Day Opening Remarks**

9:00-10:15 **Lightning Institute Project Presentations**

In this session, each attendee will have 5 minutes (max) to quickly present and discuss their proposed final institute project.

10:15-10:30 **Break**

10:30-12:00 **Lightning Institute Project Presentations (Part II)**

In this session, each attendee will have 5 minutes (max) to quickly present and discuss their proposed final institute project.

12:00-1:15 **Lunch**

1:15-4:00 **Project Consultations**

In this session, attendee will have an opportunity to consult with institute faculty on their proposed final project. The intended outcome for this session is a formal project proposal.

4:00-5:00 **Year 1 Wrap Up - Interim Year Planning**

Institute for Digital Archaeology Method & Practice

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Unless otherwise stated, all institute activities will take place in LEADR (leadr.msu.edu) – which is located in 112 Old Horticulture.

MONDAY (AUGUST 15)

8:00-8:30	**Check In**
8:30-10:30	**Opening Remarks, Institute Introduction, Logistical Information** **Lynne Goldstein** (Professor, Department of Anthropology; Director, Campus Archaeology Program) **Dean Rachel T.A. Croson** (Dean, College of Social Science) **Jodie O'Gorman** (Chair, Department of Anthropology) **Dean Rehberger** (Director, MATRIX: The Center for Digital Humanities & Social Sciences) **Ethan Watrall** (Assistant Professor, Department of Anthropology, Director, Cultural Heritage Informatics Initiative, Associate Director, MATRIX)
10:30-10:45	**Break**

10:45-12:00 **Project Update Presentations**

10 minute presentations from each institute member. Will provide everyone an opportunity to show where they are in the project, talk about what they did over the past year, and what they need to get done before launch at the end of the institute. The presentations also ensure that everyone knows where everyone else is on their projects. The presentations also provide an opportunity for faculty and mentors to figure out where and how they can contribute to the successful completion and launch of all the institute projects.

12:00-1:15 **Lunch**

1:15-2:30 **Project Update Presentations (Part 2)**

2:30-2:45 **Break**

2:45-4:30 **Project Update Presentations (Part 3)**

4:30-5:00 **Day 1 Wrap Up**

TUESDAY (AUG 16)

8:30-9:00 **Day 2 Opening Remarks**

9:30-10:30 **Archive of Malian Photography — Project Background and Intellectual Property Considerations (Catherine Foley)**

For this talk, I will describe the development and goals of the Archive of Malian Photography, a British Library and NEH-funded project to provide access to preserved & digitized collections of five important photographers in Mali. Since 2011, under the leadership of Professor Candace Keller, a collaborative team of US and Malian conservators has been cleaning, scanning, cataloging, and rehousing circa 100,000 photographic negatives from the archives of Mamadou Cissé, Adama Kouyaté, Abdourahmane Sakaly, Malick Sidibé, and Tijani Sitou for long-term preservation and world-wide access. The talk will also touch on intellectual property (IP) considerations specifically copyrights held over the materials in the Archive of Malian Photography. It will explain decisions made by project collaborators related to Creative Commons licenses for the metadata and distribution files and the process of drafting a Partnership Agreement that articulates Duties and Responsibilities of the partners. From the outset, IP issues influenced the implementation of the Archive of Malian Photography due to a history of exploitation of African heritage materials, in particular the illegal and/or unethical acquisition in photographic negatives and the unauthorized reproduction of images without the consent of photographers.

10:15-10:30 **Break**

10:45-12:00 **3D in Museums; Museums in 3D (Dan Pett)**

In this presentation, we'll demonstrate the burgeoning world of 3D in the Bloomsbury museum area. It will discuss the development of 3D practise and implementation in the Museum environment and discuss different printing methodologies, with some models for handling. It will also touch on the Museum in a Box project, which is updating the well-known idea of handling collections and museum outreach with 3D printing and Internet of Things to create a fun, tactile and multi-sensory box of museum objects designed to engage and delight kids across the UK.

12:00-1:15 **Lunch**

1:15-1:45 **Daily Project Scrum**

Answer 3 questions: (1) What did you do yesterday to move you project forward, (2) What are you doing today to move your project forward, and (3) is there anything specific that is standing in the way of moving your project forward.

1:45-4:30 **Project Development Time**

4:30-5:00 **Day 2 Wrap Up**

WEDNESDAY (AUGUST 17)

8:30-9:00 **Day 3 Opening Remarks**

9:00-10:15 **#Failing Productively in Digital Archaeology (Shawn Graham)**

Fail fast, fail often! It's a ridiculous slogan. Even - if 30 seconds on Google is any judge - even the software folks are becoming a bit leery of saying it. Failure (real failure) carries significant risks to careers, to projects, to our emotional wellbeing. I have long encouraged my students and colleagues to 'fail gloriously', to take risks, to try something different. To push. To resist. Even then, 'fail' was not to be understood in the sense of 'failure'. Rather, it meant to iterate (but 'Iterate Gloriously' just doesn't have the same ring to it). The heart of science is falsifiability, the imperative to reproduce research and to fail; fear of fail holds us all back. Imposter Syndrome will rear its ugly head. In this presentation, I explore a taxonomy of different kinds of 'fails', drawing on examples from my own very public fails, and their implications for how we do digital archaeology. I explore what these mean in both within and without the classroom. Unless, of course, I fail.

10:15-10:30 **Break**

10:30-12:00 **Delivering the Baby, Then What? (Dan Pett)**

This presentation will address getting a project to delivery point using project management techniques; how you can overcome potential impasses through lateral thinking; the application of digital sticky tape or triage and a release early and release often philosophy. Once your project has been delivered, what next? Do you go home with a crying baby, or do you work out how to soothe and maintain the status quo? Using anecdotal evidence from a variety of project that the presenter has worked upon, discussion will be prompted on what could work for MSUDAI projects.

12:00-1:15 **Lunch**

1:15-1:45 **Daily Project Scrum**

Answer 3 questions: (1) What did you do yesterday to move you project forward, (2) What are you doing today to move your project forward, and (3) is there anything specific that is standing in the way of moving your project forward.

1:45-4:30 **Project Development Time**

4:30-5:00 **Day 3 Wrap Up**

THURSDAY (AUGUST 18)

8:30-9:00 **Day 4 Opening Remarks**

9:00-10:15 **Marketing Digital Archaeology: The Good, the Bad, and the Ugly (Eric Kansa)**

Evgeny Morozov recently criticized Internet utopianism in his influential book, To Save Everything, Click Here (2014). His points offer a valuable perspective in considering the development of Digital Archaeology, a field that often demands the commoditization, marketing, and branding of scholarship “as a service”. In face of these pressures, how can we better sustain substantive and reflective intellectual engagement with a digitized past? Digital engagement requires much longer time scales in funding and greater professional commitment to recognizing the process and conduct of research rather than rewarding only the efficient production of measurable research outcomes.

10:15-10:30 **Break**

11:00-12:00 **Not all Networks: Toward Open, Sustainable Research Communities (Kathleen Fitzpatrick)**

The recent sale of the Social Science Research Network to Elsevier, and the recent efforts of Academia.edu to find a revenue model in peer review, have at long last highlighted for the scholarly communication landscape something that's been visible in other forms of social media for a while: when it comes to networks, openness is a virtue, but other determinants matter as much or more. This talk will explore the importance for the future of network-based scholarly communication of developing open, sustainable scholarly communities, and the necessity that those communities be mission-driven and scholar-governed. My argument will be grounded in my work on Humanities Commons, an interdisciplinary scholarly network being developed by the Modern Language Association in partnership with several other humanities-based learned societies. Together, we are working to build a network that will be open to any interested scholar while providing particular benefits for the members of the participating societies. What may be most important about Humanities Commons is precisely that it is being developed and supported by scholarly societies: first, because those societies were originally founded for the express purpose of supporting communication amongst their members, and second, because those societies are member-governed. As a result, the network that these societies are working to launch will not simply be open, but will be mission-driven, ensuring that the network's development has serving its members' needs as its primary goal. Ensuring that a network such as Humanities Commons can succeed, however, requires its members to be willing to support and sustain the platforms that facilitate their work. The development of truly open, mission-driven scholarly communities will thus require that societies and scholars alike embrace a shift in the locus of value in joining a scholarly society: rather than that value residing in the receipt of member-only materials (journal subscriptions; convention registration discounts), in the age of scholarly networks the primary value in membership may instead lie in the ability to participate in community conversations and processes. This finally implies what may be the most crucial shift of all, a deep rethinking of what it is we mean when we call a form of scholarly communication "open"; too many of our experiments in open scholarly communication (whether open-access publishing or open networks) have gotten trapped in the market-based logics of APCs and VC funding. Open, sustainable scholarly communities will require us to develop an alternative intellectual economy, a collectivist network that scholars both support and lead.

12:00-1:15 **Lunch**

1:15-2:45 **Daily Project Scrum**

Answer 3 questions: (1) What did you do yesterday to move you project forward, (2) What are you doing today to move your project forward, and (3) is there anything specific that is standing in the way of moving your project forward.

1:45-4:30 **Project Development Time**

4:30-5:00 **Day 4 Wrap Up**

FRIDAY (AUGUST 19)

8:30-9:00 **Day 5 Opening Remarks**

9:00-10:15 **Promoting A Digital Project: Identifying, Targeting, and Engaging Your Audience (Terry Brock)**

This presentation will focus on the best practices and strategies to develop ongoing engagement with your audience through your digital project using social media tools and strategies.

10:15-10:30 **Break**

10:30-12:00 **Teaching Digital Literacy and Skills in the Heritage Classroom (Brian Geyer)**

LEADR's goal is to instill in our students the digital skills relevant to being digitally literate and competitively trained for the workforce. We also strive to promote the use of digital technologies in the social sciences, including in cultural heritage projects. This talk will overview how we develop digital technology projects for use in heritage courses for undergraduates, the approaches we take in partnering with faculty (who may be resistant to utilizing digital tools in either research or courses), and strategies we employ while teaching specific skills. I will also discuss some of the common pitfalls we have encountered and ways we have dealt with them.

12:00-1:15 **Lunch**

1:15-3:00 **Campus Archaeology Tour**

3:00-4:30 **NEH and Future Funding Opportunities (Jennifer Serventi, Senior Program Office, National Endowment for the Humanities)**

3:30-4:30 **Project Development Time**

3:00-4:30 **Day 5 Wrap Up**

SATURDAY (AUGUST 20)

8:30-9:00 **Final Day Opening Remarks**

9:00-10:15 **Publishing Strategies that Fit Individual Needs: A Focus on Creating the World Where You Want to Be (Christine Szuter, Lynne Goldstein)**

As a scholar—whether working in the academy, a nonprofit organization, a government institution, or the corporate world—a major responsibility is creating new knowledge that is disseminated to specific audiences in one's professional life. Those audiences can range from narrow, specialized ones to a larger public eager to know more. Publishing is no longer solely relegated to print on paper in any field, so the incorporation of digital publishing strategies is a critical way to enhance and enlarge audiences leading to career satisfaction and advancement. These strategies cannot be universally applied, but must be thoughtfully considered depending on one's current career, desired future work, available time and money, work styles, and personal situations. The presenters will discuss individual publishing strategies for the participants that reflect these considerations: their current profession, their future career desires, and the realities of their personal lives. The focus will be on digital publishing strategies for archaeological scholarship that reach multiple and diverse audiences. The presenters will prepare some general thoughts on publication and long-term preservation and then will tailor their comments to the participants' projects completed for the Institute.

10:15-10:30 **Break**

10:30-12:00 **Beyond the Institute - Digital Archaeology Projects Lightning Talks**

Beyond the Institute - Digital Archaeology Projects Lightning Talks
Have an idea for another digital archaeology project? Want to get feedback for institute attendees? Want to see if other people are interested in collaborating? Here is your chance.

12:00-1:15 **Lunch**

1:15-1:45 **Daily Project Scrum**

Answer 3 questions: (1) What did you do yesterday to move you project forward, (2) What are you doing today to move your project forward, and (3) is there anything specific that is standing in the way of moving your project forward.

1:45-4:30 **Project Development, Project Launch**

4:30-5:00 **Institute Wrap Up**